REMARKS

Claims 11-15 and 22-37 are pending in this application, including new claims 22-37.

Claims 11, 22, 24, 30, and 32 are in independent form. Currently no claims stand allowed. The

Office action rejects claims 11-21 under 35 U.S.C. § 103(a) as being unpatentably obvious over

U.S. Patent No. 5,579,221 to Mun (*Mun*) in view of U.S. Patent No. 5,506,789 to Russell et al.

(*Russell*).

Claim 11

Independent claim 11 includes "a lookup service maintaining a database of (1) the power-

consuming devices including their attributes of device type and physical location, and (2) device

objects corresponding to the power-consuming devices including a name for each device object

mapped to at least one address." Contrary to what is asserted in the Office action, *Mun* does not

teach or suggest the use of a lookup service and database within a home automation system

architecture. The Office action points to column 9, lines 25-32, and column 10, lines 30-35, for

support of its assertion. Neither of these passages, however, refers to a lookup service or a

database, nor does any other part of the *Mun* reference.

Claim 11 is amended herein to clarify that the "store" in the architecture is specifically "a

soft state store." (This distinction was explicit in the original version of claim 11.) *Mun* does not

teach or suggest the use of "refresh information" along with a "soft state store" for determining

the approximate ("soft") state of a home automation system. The special meaning of "soft state"

in the computer networking and distributed systems arts is explained in the paper S. Raman and

S. McCanne, "A Model, Analysis, and Protocol Framework for Soft State-Based

Communication." Applicants submitted this reference in their first Information Disclosure

Statement, dated November 11, 2000.

Moreover, *Mun* does not teach or suggest "a publication/subscription eventing component enabling subscriptions to events related to changes in the refresh information managed by the soft state store." The passage in *Mun* cited in the Office action (column 3, line 60 through column 4, line 6) makes no suggestion of either a "publication/subscription eventing component" or "soft state." As explained in applicants' specification, "The publication/subscription eventing component 312 enables objects, daemons, programs, and other *software components* to subscribe to events related to changes in the soft-state store 316." Specification, p. 13 (emphasis added). The cited passage in *Mun* refers to a method by which a *human user* can select electrical appliances to be controlled. See *Mun* at col. 4, ll. 4-6. Human system users are unlike automated software processes, particularly in the context of a home automation system. In addition, the selection of electrical appliances is unrelated to automated subscribing to events associated with changes in system state, such as an event corresponding "to the situation that an unacceptable pattern has been detected on the power line" (Specification, p. 20).

Claims 22, 24, 30 and 32

Applicants have elected to cancel independent claims 16 and 17. The present amendment adds new independent system claims 22 and 24, which are similar to canceled claims 18 and 19, respectively, which depend from claim 16. Also added are new independent method claims 30 and 32, which are similar to canceled claims 21 and 20, respectively, which depend from claim 17. Applicants respectfully request consideration of these new claims. These claims are allowable over *Mun* and *Russell*. Neither of these references, alone or in combination, teach or suggest the pattern-based and model-based power line monitoring of applicants' claims.

The system of claim 22 includes "a power line monitor that detects a first pattern in the first and second sets of superimposed signals, and performs a predetermined action if the first

pattern matches a second pattern stored in a database of unacceptable power line patterns."

Method claim 30 similarly includes "determining whether the first pattern matches a second

pattern stored in a database of unacceptable power line patterns." *Russell* does not teach or

suggest this feature, contrary to what is asserted in the Office action in its discussion of claims

13, 18 and 21. In support of its contention, the Office action cites *Russell*, column 6, lines 3-8,

which states:

> [T]he load extraction fault detector 10 monitors parameters indicative of power
> flow and possible fault events on the feeder line 12. From this monitoring,
> detector 10 assembles a collection of data, which is stored in selected buffers or
> "windows," such as one of buffers 80 and 82 of RAM 52.

This passage indicates that data collected by way of monitoring a power line is placed in

ordinary volatile RAM buffer storage. It does not, however, speak of *an additional nonvolatile*

database store of known and previously encountered unacceptable power line patterns, against

which the buffer-stored power line data can be compared. Pattern-matching is not described in

Russell.

System claim 24 includes "a power line monitor that detects a pattern in the first and

second sets of superimposed signals, and performs a predetermined action if the pattern fails to

conform to a model of acceptable power line patterns." Method claim 32 similarly includes

"determining whether the pattern fails to conform to a model of acceptable power line patterns."

Russell does not teach or suggest this model-based power line monitoring feature. In rejecting

claims 14 and 19, the Office action argues that the following passage in *Russell* teaches the use

of model-based detection:

> The data in buffer 80 is continually updated on a rotational basis with each
> sampling period of the sampler 45, here by way of example, once per second.
> Thus, when a new group of data is added to buffer 80, it replaces the previous
> data group, which may be stored in another memory location or deleted. In this

> manner, the buffer 80 always stores a data group representing the most recent sampling of power flow through feeder 12. This data rotation advantageously allows for a continual adjustment to reflect the daily power swings from peak periods to low use periods, and to dynamically accommodate immediate load changes on the line 12.

Russell, col. 6, ll. 49-59. This passage makes no reference to a model of acceptable power line patterns.

Applicants suspect that the Office action associates the "sampler" of *Russell* with the model of applicants' claims. However, these concepts are entirely unrelated. The sampler in *Russell* is a power parameter sampling device which "samples the digitized current signal 44 at selected intervals to provide an accurate representation of the load level due to rapidly changing conditions, such as during arcing faults." *Id.* at col. 4, ll. 34-39. That is, the sampler is used to measure or represent the actual conditions on the power line. It has no relation to the use of a separate acceptable power line pattern *model*, such as a probabilistic or statistical model of acceptable power line activity.

In rejecting claims 15 and 20, the Office action asserts that *Russell* teaches the testing of power line patterns against the model of acceptable power line patterns, citing the following passage in *Russell*:

> The normal or predominant waveform in buffer 80 is determined from a criteria which uses a sample-by-sample comparison of consecutive individual waveforms for each cycle at the power system frequency. Each waveform's data stored in buffer 80 is compared with the data representing the waveform which immediately preceded it. The sampling rate of sampler 45 determines the basis of comparison on a power frequency scale.

Id. at col. 6, ll. 60-67. This quotation describes the use of sampling to compute normal waveforms, which information is in turn used to detect faults. Sampling, however, is unrelated to the technique of using statistical, probabilistic, or other *models* of acceptable power line
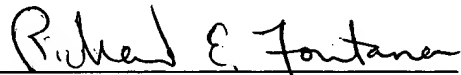
activity.

For at least the foregoing reasons, applicants respectfully request that the rejection of

claim 11 be withdrawn, and that independent claims 11, 22, 24, 30, and 32 be allowed.

Moreover, because these independent claims are allowable, all claims depending from these

claims are also allowable, and the rejections of claims 12-15 should be withdrawn.

CONCLUSION

The application is considered to be in good and proper form for allowance, and the

Examiner is respectfully requested to pass this application to issue.

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution

of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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